OPTIMIZATION OF MERCURY REMOVAL USING PALM OIL FUEL ASH

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Thesis is submitted in partial fulfilment of the requirements
for the award of the degree of
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SUPERVISOR'S DECLARATION

We hereby declare that we have checked this thesis and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor of Chemical Engineering.

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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award of other degree

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Dedicated to my family, and my friends.

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TABLE OF CONTENTS

		Page
SUPERVISOR'S DECLARATION		**ii**
STUDENT'S DECLARATION		**iii**
ACKNOWLEDGEMENT		**v**
ABSTRACT		**vi**
ABSTRAK		**vii**
TABLE OF CONTENTS		**viii**
LIST OF TABLES		**x**
LIST OF FIGURES		**xi**
LIST OF SYMBOLS		**xii**
LIST OF ABBREVIATIONS		**xiii**
CHAPTER 1	**INTRODUCTION**	**1**
1.1	Background of the Study	1
1.2	Motivation	3
1.3	Problem Statement	4
1.4	Objectives	5
1.5	Scopes of Study	5
CHAPTER 2	**LITERATURE REVIEW**	**6**
2.1	Introduction	6
2.2	Industrial Wastewater	6
2.2.1	Characteristic of Industrial Wastewater	7
2.2.1.1	Colour	7
2.2.1.2	Temperature	7
2.2.1.3	Odour	7
2.2.2	Heavy metal discharges	8
2.3	Mercury Contamination	10
2.3.1	Impact of Mercury to Health	12
2.4	Technologies of Mercury Treatment In Wastewater	12
2.5	Activated Carbon in Biosorption Technology	16
2.6	Palm Oil Fuel Ash as Activated Carbon	17
2.6.1	Origin and Characteristics of POFA	17
2.7	Design of Experiment	18

2.7.1 Factorial Design 19
2.7.2 Optimization 19
CHAPTER 3 METHODOLOGY 20
3.1 Introduction 20
3.2 Chemicals 20
3.3 Experimental Analysis 21
3.4 Experiment Methodology 21
3.4.1 Experiment of Biosorption 21
3.4.2 Optimization of Contact Time and Agitation Speed 22
3.4.3 Validation of Experiments 22
CHAPTER 4 RESULTS AND DISCUSSION 23
4.1 Introduction 23
4.2 Optimization on Mercury Removal Efficiency 23
4.2.1 Model Fitting 25
4.2.2 ANOVA 26
4.2.3 Effect of Conditions on Mercury Removal Factor 28
4.2.3.1 Effect on contact time 30
4.2.3.2 Effect on agitation speed 30
4.3 Determination of Optimum Condition for Mercury Removal 31
4.4 Validation of Model 31
CHAPTER 5 CONCLUSION AND RECOMMENDATION 33
5.1 Conclusion 33
5.2 Recommendation 34
REFERENCES 35
Appendix 39

LIST OF TABLES

Table No.	Title	Page
Table 2.1: List of Heavy Metals and Its Description		8
Table 2.2: Description of the Sampling Site		9
Table 2.3: Data of Contamination Intensity in Water Collected in Gebeng		10
Table 2.4: Summary of treatment technologies		14
Table 4.1: Low Level And High Level Of Parameters		24
Table 4.2: Experimental Design and Response For Optimization.		24
Table 4.3: Sequential model sum of squares		25
Table 4.4: Lack of fit		26
Table 4.5: ANOVA analysis for the optimization model		27
Table 4.6: The best conditions were analyzed by Design Expert 7.0.0 software		31
Table 4.7: Result for validation of model		32

LIST OF FIGURES

Figure No.	Title	Page
Figure 2.1: Illustration on how Hg entering the environment.		11
Figure 2.2: Fine powder of POFA applied for aqueous solution		18
Figure 2.3: Structure of POFA		18
Figure 4.1: Predicted vs. actual mercury removal factor colored by standard order		28
Figure 4.2: Response surface plot of mercury removal for contact time and agitation speed		29
Figure 4.3 Interaction graph for the effects of contact time and agitation speed		29

LIST OF SYMBOLS

%	percent
°C	degree celcius
rpm	revolutions per minute
mg/L	milligram per litre
ppm	part per million
ppb	part per billion

LIST OF ABBREVIATIONS

AC	Activated carbon
Ag	Silver
As	Arsenic
Au	Gold
ANOVA	Analysis of Variance
Ba	Barium
BOD	Biological Oxygen Demand
CCD	Central Composite Design
DF	Degree of freedom
Cd	Cadmium
Co	Carbonous oxide
COD	Chemical Oxygen Demand
CTA	Cellulose Triacetate
Cu	Copper
Fe	Iron
HCl	Hydrochloric Acid
Hg	Mercury
$Hg1^{+}$	Mercurous Mercury
$Hg2^{+}$	Metallic Mercury
HMS	Hexagonal Mesoporous Sillica
MS	Mean Square
NaOH	Sodium Hydroxide
Ni	Nickel
NIC	Newly Industrial Country

Pb	Lead
POFA	Palm Oil Fuel Ash
RSM	Response Surface Materials
Se	Selenium
SS	Sum of Square
TFC	Thin Film Composite
TOC	Total Organic Carbon
Zn	Zinc